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**SMITH & MONROE & GRAY ENGINEERS**

**MEMORANDUM**

91-093

**TO:** Dan Peters  
Ash Grove Cement Company Seattle

**FROM:** Stephen Rinella  
Smith & Monroe & Gray Engrs.

**DATE:** February 7, 1992

**RE:** SITE DRAINAGE SYSTEM

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For your information, yesterday Jeff with Merlino called again regarding the need for thrust blocks on the buried forced storm discharge line. As you may recall, I told him before to use "standard thrust blocks" for the line; he noted that for a 14 inch water main, the size of thrust block is significant and questioned whether we really needed that much support. I told him I would look into the matter further and get back to him; I ask Klein for some input and they will get back to me next Monday, I will respond to Merlino (and you) then.

The fact is, our line pressures are considerably lower than water mains and therefore our requirement for thrust blocks and anchorage is also less. In addition, the need and extend of thrust blocks and anchorage is affected by the type of local soils, placement and compaction of backfill in the trench, the type and location of pipe joints, and other factors. If we choose to use "standard thrust blocks" as noted above, we can be safe and conservative, however we can probably reduce that requirement by looking at our situation in some more detail with respect to the factors noted above.

I expect to get an answer from Klein on Monday and I will forward that then.

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